

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

The drawings were objected to in that Figs. 1-5 do not show numerical references. Amended Figs. 1-5 are enclosed with this response and the Examiner's objection is thereby believed to be overcome.

Claim 14 is rejected under USC 112 first paragraph as being a single means claim. Claim 14 is deleted, thereby overcoming the Examiner's objection.

Claims 1-13, 15-29, 32-37, 40-42, 45 and 48-50 have been rejected under 35 U.S.C. § 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as being the invention.

The above amendments are believed to render each of the above claims allowable and overcome the above rejection.

Claims 1-8, 11, 14-21, 23, 26-31 34, 35 and 38-39 are rejected under 35 USC 102e as being anticipated by Bacus et al (6,101,265). Bacus et al discloses imaging at low resolution over a relatively large area. The user finds a region of interest using the low resolution image, selects the region of interest using a marker or cursor and then is provided with a corresponding high resolution image of the region of interest. In the preferred embodiment the lower and higher resolution images are obtained using different power lenses on the same microscope. The imaging method is the same, and the only change is in the power of the lens used.

By contrast in the present invention, two or more different images are formed using different image gathering methods. The claim has been amended to clarify that the term "image gathering method" means a combination of illumination, marking and data gathering, and that different data gathering methods mean different

combinations of illumination marking and data gathering. In the preferred embodiment the different methods are bright field and fluorescent modes.

It is further submitted that the problem solved by the present invention is not rendered obvious by Bacus et al. In Bacus, registration is carried out between two versions of the same image. There is a direct size-wise transformation between the two versions. However, in the present invention, the two data gathering methods may use different types of illumination, different markers and different ways of gathering the image data. Thus, especially at the magnifications of concern, they are not the same image and registration between them is much more of a fuzzy logic problem.

The same clarification has been added to each of the other independent claims. The independent claims are thus believed to be novel and inventive in the light of Bacus and the Examiner's rejection is respectfully believed to have been overcome.

The dependent claims are believed to be allowable as being dependent on allowable main claims.

Attached herewith is a marked up version of the changes made to the specification and claims by the current amendment. The attached pages are captioned "**Version with markings to show changes made**".

In view of the above amendments and remarks it is respectfully submitted that all the pending claims are all now in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

An early and favorable action is therefore respectfully requested.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOWN CHANGES MADE

In the Claims:

Claims 1-13, 15, 17, 18, 30, 32-34, 37-40, 42, 43, 45, 46 and 48 have been amended.

Claim 1 has been amended as follows:

--1 (Amended). A data acquisition and display system comprising
at least one data acquisition device, operable to acquire field data of a
presently viewed field having field location data, from a scannable field of interest
using each of at least a first and a second data acquisition method, said first and
second data acquisition methods being respectively different illumination, marking
and data gathering combinations,

a field data storage device for storing said field data together ~~said~~
~~corresponding with field location data~~ corresponding thereto, and

a field data display device being operable to display simultaneously field data
of said presently viewed field, acquired respectively by said first and said second data
acquisition method, said field data being matchable by said field location data. --

Claim 2 has been amended as follows:

--2 (Amended). A ~~device~~ data acquisition and display system according to
claim 1, wherein said field data is image data. --

Claim 3 has been amended as follows:

--3 (Amended). A ~~device~~ data acquisition and display system according to
claim 1, wherein said scannable field of interest is substantially larger than said

presently viewed field such that a plurality of viewed fields are required to cover said scannable field of interest. --

Claim 4 has been amended as follows:

--4 (Amended). A ~~device~~ data acquisition and display system according to claim 2, wherein said scannable field of interest is substantially larger than said presently viewed field such that a plurality of viewed fields are required to cover said scannable field of interest. --

Claim 5 has been amended as follows:

--5 (Amended). A ~~device~~ data acquisition and display system according to claim 4, wherein said field data storage device is operable to store image data of an entirety of said scannable field of interest acquired according to said first data acquisition method. --

Claim 6 has been amended as follows:

--6 (Amended). A ~~device~~ data acquisition and display system according to claim 5, wherein said data acquisition device is operable to acquire image data of a presently viewed field of view using said second data acquisition method and said field data display device is operable to display said image data in conjunction with a corresponding image acquired using said first data acquisition method. --

Claim 7 has been amended as follows:

--7 (Amended). A ~~device~~ data acquisition and display system according to claim 1, wherein said data acquisition device is a microscope. --

Claim 8 has been amended as follows:

--8 (Amended). A ~~device~~data acquisition and display system according to claim 7, wherein said data acquisition device is a microscope and wherein said microscope is any one of a group comprising a light microscope, a scanning electron microscope and a transmission electron microscope. --

Claim 9 has been amended as follows:

--9 (Amended). A ~~device~~data acquisition and display system according to claim 1, wherein said data acquisition device is a telescope. --

Claim 10 has been amended as follows:

--10 (Amended). A ~~device~~data acquisition and display system according to claim 9, wherein said telescope is any one of a group comprising a refracting telescope, a reflecting telescope, an infra-red telescope, a radio telescope, a gamma-ray telescope, and an x-ray telescope. --

Claim 11 has been amended as follows:

--11 (Amended). A ~~device~~data acquisition and display system according to claim 1, wherein said data acquisition device is terrestrially based. --

Claim 12 has been amended as follows:

--12 (Amended). A ~~device~~data acquisition and display system according to claim 1, wherein said data acquisition device is suitable for being airborne. --

Claim 13 has been amended as follows:

--13 (Amended). A ~~device~~ data acquisition and display system according to claim 1, wherein said data acquisition device is suitable for being spaceborne. --

Please delete claim 14.

Claim 15 has been amended as follows:

--15 (Amended). An acquisition and display co-ordinator for co-ordinating between at least one image data acquisition device, operable for acquiring image data according to at least two data acquisition methods, and a data display device, said co-ordinator being operable to store image data obtained using a first data acquisition method together with location data of ~~said~~ an image within a scannable field of interest, and to display said image simultaneously with an image having similar location data acquired using a second data acquisition method said first and second data acquisition methods being respectively different illumination, marking and data gathering combinations. --

Claim 17 has been amended as follows:

--17 (Amended). An acquisition and display co-ordinator according to claim 16, operable to store image data of ~~said~~ an entirety of said scannable field of interest acquired according to said first data acquisition method. --

Claim 18 has been amended as follows:

--18 (Amended). An acquisition and display co-ordinator according to claim 17, wherein said data acquisition device is operable to acquire image data of a

presently viewed field of view using said second data acquisition method and said ~~field~~ data display device is operable to display said image data in real time in conjunction with said ~~a~~ corresponding image acquired using said first data acquisition method. --

Claim 30 has been amended as follows:

--30 (Amended). An acquisition and display co-ordinating method comprising the steps of:

- acquiring first data of a field of view within a field of interest being scanned using a first data acquisition method,
- storing said data together with field location data of said field of view within said field of interest being scanned,
- subsequently acquiring second data of a corresponding field of view within said field of interest being scanned using a second data acquisition method, and
- retrieving said first data using said field location data and simultaneously displaying said first data and said second data, said first and second data acquisition modes being respectively different illumination, marking and data gathering combinations. --

Claim 32 has been amended as follows:

--32 (Amended). An acquisition and display co-ordinating method according to claim 31, wherein said ~~simultaneously displayed~~ first and second images, being simultaneously displayed, are superimposed one on the other. --

Claim 33 has been amended as follows:

--33 (Amended). An acquisition and display co-ordinating method according to claim 31 wherein said first and second images, being simultaneously displayed, ~~images are displayed side by side.~~ --

Claim 34 has been amended as follows:

--34 (Amended). An acquisition and display co-ordinating method according to claim 31, wherein at least one of said first data and said second data is acquired using any one of a group comprising a thermal imager, a microscope, an image intensifier, a telescope, a camera, and a radar. --

Claim 37 has been amended as follows:

--37 (Amended). An acquisition and display co-ordinating method according to claim ~~34~~ 31, wherein at least one of said first and said second data is acquired using ~~said data acquisition device is one a member of a~~ group comprising a telescope and a thermal imaging device, said member being operable to gather data at a plurality of different wavelengths and wherein each data acquisition method comprises gathering data at a different one of said wavelengths. --

Claim 38 has been amended as follows:

--38 (Amended). A method of display of data acquired in at least two data acquisition methods from a scannable field of interest comprising:

- scanning the field of interest using a first data acquisition method,
- forming a plurality of first images of said field of interest,
- indexing said images,

storing said indexed images,
 scanning the field of interest using a second data acquisition method to form
 at least one second image corresponding to one of said first images,
 determining from the indices which of said first images corresponds to said
 second image,
 simultaneously displaying said second image and said corresponding first
 image, said first and second data acquisition method being respectively different
 illumination, marking and data gathering combinations. --

Claim 39 has been amended as follows:

--39 (Amended). A method of display of data acquired in at least two data
 acquisition methods from a scannable field of interest comprising:
 scanning the field of interest using a first data acquisition method,
 forming a plurality of first images of said field of interest,
 indexing said images,
 storing said indexed images,
 scanning the field of interest using a second data acquisition method to form
 at least one second image corresponding to an index of a predetermined one of said
 first images, and
 simultaneously displaying said second image and said corresponding first
 image said first and second data acquisition methods being respectively different
 illumination, marking and data gathering combinations. --

Claim 40 has been amended as follows:

-- 40. (Amended) A method of constructing an image gathering and display co-ordination system, the method comprising,

providing an image gathering device operable to gather image data, using a plurality of image gathering methods, according to externally provided positioning commands,

providing an image storing device and connecting said image ~~storage~~ storing device to said ~~data~~ image gathering device such that ~~it~~ said image storing device is able to store data gathered from said image gathering device in association with said externally provided positioning commands corresponding to said data, and

providing an image display device for simultaneously displaying a plurality of images gathered using different image gathering methods but with identical positioning commands said different image gathering methods being respectively different illumination, marking and data gathering combinations. --

Claim 42 has been amended as follows:

-- 42. (Amended) A control system for controlling an image data acquisition device, operable for acquiring image data according to at least two data acquisition methods, and a data display device, said control system being operable to store image data obtained using a first data acquisition method together with location data of said image data within a scannable field of interest, and to display image simultaneously with an image having similar location data acquired using a second data acquisition method said first and second data acquisition modes being respectively different illumination, marking and data gathering combinations. --

Claim 43 has been amended as follows:

-- 43. (Amended) A control system for controlling an imaging device and a display device together to permit a user to move over a field of interest with said imaging device to image the field in parts using one imaging method, and to display a current part on said display device whilst simultaneously and automatically displaying a second image of a same part of the field previously obtained using a different imaging method, the second image being automatically replaced as the imaging device moves to a different part of the field of interest said said imaging methods being respectively different illumination, marking and data gathering combinations. --

Claim 45 has been amended as follows:

-- 45. (Amended) A data acquisition and display system comprising
 at least one data acquisition device, operable to scan a field of interest and acquire field data of parts having field location data, from said scannable field of interest using each of at least a first and a second data acquisition method,
 a field data storage device for storing said field data together with ~~said~~ corresponding field location data, and
 a field data display device being operable to display simultaneously field data, acquired respectively by said first and said second data acquisition method, said field data being matchable by said field location data said first and second data acquisition methods being respectively different illumination, marking and data gathering combinations. --

Claim 46 has been amended as follows:

--46 (Amended). A method of applying an intrinsic co-ordinate system to a mount-and-object system to provide co-ordinated viewing of points on said object imaged using different image gathering methods, said image gathering methods being respectively different illumination, marking and data gathering combinations, the method comprising:

identifying a plurality of edge points in said mount and object system using automatic image processing,
 interpolating straight lines between said edge points,
 identifying two perpendicular straight lines from said interpolated straight lines,
 identifying a meeting point between said perpendicular straight lines,
 defining said meeting point as an origin for said intrinsic co-ordinate system, and
using said co-ordinate system to provide automatic cross-referencing between said points on said object imaged using said different image gathering methods. --

Claim 48 has been amended as follows:

-- 48. (Amended) A method of imaging a mount-and-object system using an ~~internal~~-intrinsic co-ordinate system, comprising the steps of:

identifying a plurality of edge points in said mount and object system using automatic image processing,
 interpolating straight lines between said edge points,
 identifying two perpendicular straight lines from said interpolated straight lines,
 identifying a meeting point between said perpendicular straight lines,
 defining said meeting point as an origin for said intrinsic co-ordinate system,

making a plurality of images at different locations on said mount-and-object system, and

indexing said images based on its respective location expressed in terms of said intrinsic co-ordinate system, thereby to provide correspondence between regions
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on said object when imaged by different imaging methods, said different imaging methods being respectively different illumination, marking and data gathering combinations. --